

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/053368 A1

(51) International Patent Classification⁷: **H05K 3/18, 3/24**

(21) International Application Number:

PCT/JP2004/018077

(22) International Filing Date:

29 November 2004 (29.11.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2003-397038	27 November 2003 (27.11.2003)	JP
2004-046803	23 February 2004 (23.02.2004)	JP
2004-163782	1 June 2004 (01.06.2004)	JP
2004-293686	6 October 2004 (06.10.2004)	JP
2004-296853	8 October 2004 (08.10.2004)	JP

(71) Applicant (for all designated States except US): **FUJI PHOTO FILM CO., LTD.** [JP/JP]; 210, Nakanuma, Minami-Ashigara-shi, Kanagawa 2500123 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KANO, Takeyoshi** [JP/JP]; c/o FUJI PHOTO FILM CO., LTD., 200, Ohnakazato, Fujinomiya-shi, Shizuoka 4180044 (JP). **KAWAMURA, Koichi** [JP/JP]; c/o FUJI PHOTO FILM CO., LTD., 200, Ohnakazato, Fujinomiya-shi, Shizuoka 4180044 (JP).

(74) Agents: **NAKAJIMA, Jun** et al.; TAIYO, NAKAJIMA & KATO, Seventh Floor, HK-Shinjuku Bldg., 3-17, Shinjuku 4-chome, Shinjuku-ku, Tokyo 1600022 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

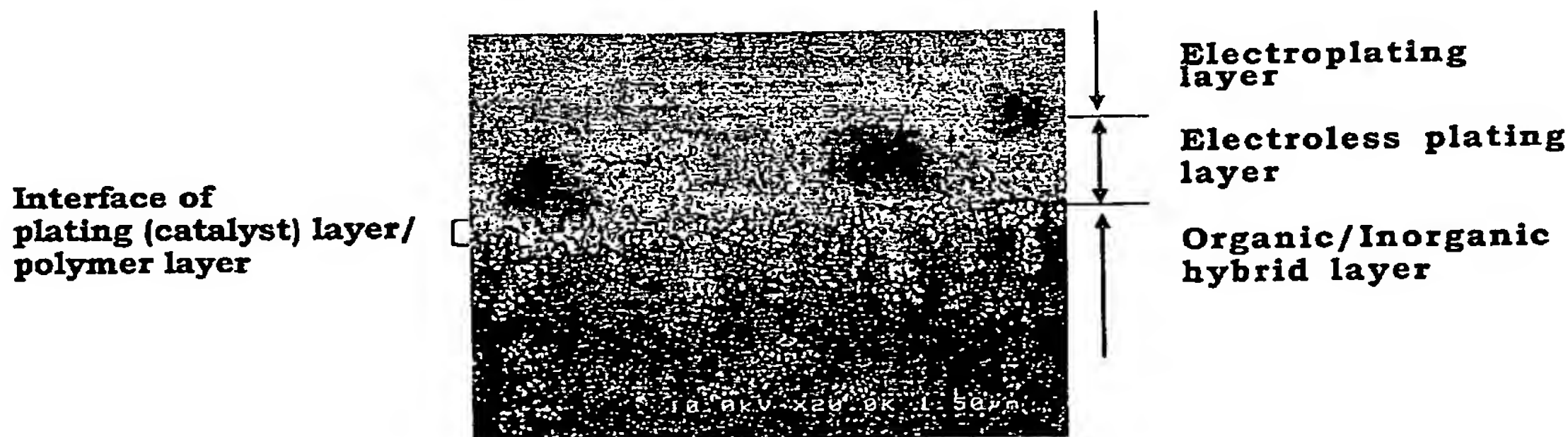
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: METAL PATTERN FORMING METHOD, METAL PATTERN OBTAINED BY THE SAME, PRINTED WIRING BOARD, CONDUCTIVE FILM FORMING METHOD, AND CONDUCTIVE FILM OBTAINED BY THE SAME



(57) Abstract: The present invention provides a method of forming a metal pattern and a metal pattern obtained by the method. The method includes the steps of (I) forming on a substrate a polymer layer in which a polymer having a functional group that interacts with an electroless plating catalyst or a precursor thereof is chemically bonded directly to the substrate in a pattern form, (II) adding the electroless plating catalyst or precursor thereof to the polymer layer, and (III) forming a metal layer in the pattern form by electroless plating. The present invention also provides a method of forming a conductive film, including the steps of (A) forming on a substrate a polymerization initiating layer in which a polymer having, on a side chain thereof, a crosslinking group and a functional group having polymerization initiating capability is immobilized by a crosslinking reaction on the surface of the base material, (B) generating a graft polymer by chemically bonding a polymer having a functional group that interacts with an electroless plating catalyst or a precursor thereof directly onto the entire surface of the polymerization initiating layer, (C) adding the electroless plating catalyst or precursor thereof to the graft polymer, and (D) forming a metal layer by electroless plating.





For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

BEST AVAILABLE COPY